

NEW ENGLAND TELEPHONE INTEGRATED SERVICES DIGITAL NETWORK (ISDN) Basic Exchange Service

What is ISDN Basic Exchange Service (BES)?

ISDN is based on internationally accepted standards for voice, image, data and signalling transmission. Basic Exchange Service allows a single phone line to carry three separate channels. Two of the channels, referred to as Bearer (B) channels, can each transmit voice or data at speeds as high as 64Kbps. The third channel, referred to as the Data (D) channel, transmits data for signalling and can support user packet-switched data at up to 9.6 Kbps.

What type of B + D channel voice and data capabilities are available?

Circuit Switched Voice (CSV) on the B channel provides high quality voice communication that lets you take advantage of advanced electronic telephone equipment features without expensive on-premises hardware (i.e., PBX and key system controllers.) Digital Electronic Telephone Service allows for improved call management by using programmable features such as call conferencing, display, multiple and shared call appearances, and call forwarding.

Circuit Switched Data (CSD) on the B channel allows data communications at speeds up to 64Kbps, a huge improvement over analog modem speeds and performance. It is an economical method of transferring data since you pay only while a connection is made to a remote end, as opposed to private facilities which incur a cost whether they are used or not. CSD applications include screen sharing, video teleconferencing, and fax and image transmission.

Alternate Voice or Circuit Switched Data (AV/CSD) operates over a single 64Kbps B channel which is capable of either speech or data transmission. Voice or data may be used alternately on separately established calls.

Low Speed Packet Switched Data (LSPSD) on the D Channel operates at speeds up to 9.6Kbps using X.25 standards and is ideal for interactive applications such as electronic mail or corporate database access. The data is separated into discrete segments called packets for transmission through the network. Packet mode screen sharing and remote access to printers and other computer resources are enabled by LSPSD.

High Speed Packet Switched Data (HSPSD) provides synchronous network transport of data at speeds up to 64Kbps. HSPSD is ideal for applications in which large amounts of data are sent in large "bursts" and where faster response times than LSPSD provides are required. As with LSPSD, a customer can use a data terminal to send multiple data transmissions simultaneously to separate destinations. HSPSD provides more management and security features than is available through Circuit Switched Data. HSPSD is also suitable for timesharing and host access applications.

You must decide how you wish to configure your ISDN Basic Exchange line based upon your applications and equipment. At least one Basic Service Capability must be specified before any of the optional features may be selected. No more than three Basic Service Capabilities may be activated on a single line. If three Basic Service Capabilities are selected, one of these must be low speed packet data.

Who uses ISDN?

ISDN Basic Exchange Service can provide someone who works at home or a remote office with casual access to a company computer, electronic mail and corporate databases using Low Speed Packet Switched Data. An ISDN user might need to retrieve a large spreadsheet or text file and work on it further from his/her personal computer by utilizing Circuit Switched Data on the B channel. A customer with multiple office locations might wish to reduce costs and improve productivity by using teleconferencing and image transfer with Circuit Switched Data. Lastly, picture colleagues communicating face-to-face while sharing documents, graphics, video and other information on each others' computer screens, all from a single telephone line.

What type of line do I need for ISDN Basic Service?

ISDN is available from suitably equipped offices for use with residence or business exchange service or INTELLIPATH digital centrex service. A qualified line is within the loop deployment range of three and one-half miles from your local switching office. For residence customers, it is recommended that you keep your current residential line and bring ISDN in as an additional line to your house. Your ISDN equipment will require local power to work, so in the event of a power failure, you will not be able to make outside calls.

What type of equipment do I need?

You will need a Network Termination or "NT-1" device that is placed on the end of the digital local loop that New England Telephone brings into your location. You will want your NT-1 to support the standard 2B1Q signal coding protocol; an explanation of which is outside the scope of this document. An NT-1, complete with power supply, will cost between \$200 and \$500, depending on the vendor. Some companies selling these units are Adtran, AT&T, Fujitsu, Northern Telecom, Siemens, and UDS Motorola.

There are many types of voice and data terminal equipment on the market today that are compatible with ISDN. A Terminal Adaptor or "TA" may be needed to make your equipment interface with the network if it is not ISDN compatible. The type of equipment and/or TA you will purchase depends upon your application. Prices for equipment are hovering around the \$350 - \$1,000 range as of this writing and are available from previously mentioned vendors as well as Digital Equipment Corporation, Gandalf, Hayes, IBM, Teles and a host of others.

Vendor information is not inclusive and does not constitute a recommendation by New England Telephone or NYNEX for any of the vendors. You are free to purchase equipment from any vendor as long as it is compatible with the network. An excellent source of reference material, as well as a more inclusive list of vendors is the "Catalog of National ISDN Solutions for Selected NTUF Applications." This catalog has been approved by the North American ISDN Users' Forum. It can be obtained by calling 1-800-553-6847 or 703-487-4650; you may also write to:

National Technical Information Services
5285 Port Royal Road
Springfield, VA 22161.

Who can I call using ISDN?

ISDN voice calls function the same as any voice call you are making today on the exchange network. However, in order to make circuit switched and packet switched data calls to a destination outside your local switching office, you must verify the availability for ISDN interconnectivity at the far end. The site or person must have an ISDN line for you to make a data call. If your distant end for the data call is in an area code for which you normally use an interstate carrier in the voice world, you will have to also contact an interstate carrier to carry your data call outside the area code. There are several carriers which have network connections to carry your circuit switched and packet switched data calls. You will have to contact your carrier of choice to open an account.

Can I have National ISDN 1 Service?

National ISDN 1 (NI-1) Service provides feature-rich, cost-effective service capabilities which are widely deployed on a fully compatible nationwide ISDN platform. It supports a wide range of uniform terminal interface configurations and provides standard access to all network services for voice and data applications. Rhode Island currently offers NI-1 out of all its ISDN equipped offices except for Warwick. The NI-1 features which are offered are those described in the Rhode Island tariff.

Where can I call for more information or to order ISDN Basic Service?

If you have questions about ISDN Basic Service or wish to place an order, you may call your authorized agent or New England Telephone at 1-800-650-ISDN.

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